

A Forbest

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FREDERICK TURNER • STEVEN WEINBERG • RICH WILLIS • ANN WINBLAD • TOM WOLFE



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ISSUE

A MILLENNIUM IS THE LARGEST unit of human culture. So, not surprisingly, the turn of a millennium tends to promote big thoughts about the future and our legacy to it. No doubt the biggest of these inheritances will be the implications of the current revolution in technology. Information technology is accelerating contemporary life to unprecedented speeds. Some

of us applaud this change, some fear it. But none of us can escape it. As the magazine of this revolution, *Forbes ASAP* asked fifty-three authors, from all walks of life and all points of view, to address what this revolution means to them. You may find their answers entertaining, stimulating, and sometimes infuriating. Together they are a record of how we live at Millennium's Turn.

TABLE OF CONTENTS

THE BIG ISSUE: WHERE DO WE GO FROM HERE?

HISTORY & POLITICS

13

14 MARK HELPRIN

The Acceleration of Tranquility
"History is in motion, and those moving with it are so caught up that they cannot always see its broad outlines."



26 STEPHEN AMBROSE

When Was the Real Techno-Revolution? "We live in an age in which rapid change is certain. We have lived in a century that has experienced more change than any other. Or so we believe."



29 NEWT GINGRICH

At the Cusp of the Evolutionary War "You won't find out about the possibilities of cyberspace by hearing about it on network television."



33 FRANCIS FUKUYAMA

Trust Still Counts in a Virtual World "This disembodied organization exists without institutions, without loyalties, without face-to-face interaction."



36 JOHN KEEGAN

Computers Can't Replace Judgment
"The mere multiplication of facts, however securely stored, however diversely categorized, does not assist but may actually detract from the ultimate effort a historian must make, which is to see the woods among the trees."



39 ROBERT CONQUEST

Totalitarianism and Technology
"Nowadays, we seldom remember that the totalitarianism that emerged early this century was thought to embody, above all, modernity and technology."



41 PAUL JOHNSON

To the Historian, Imagination Still Matters "It is impossible to exaggerate the growing reliance on electronic storage systems for research historians."



43 PAUL ROMER

In the Beginning Was the Transistor
"Every culture develops its own creation myth. The myth for Silicon Valley starts with the discovery of the transistor."



48 RALPH NADER

Digital Democracy in Action
"Information is the currency of democracy, and information age technologies can make information current, accurate, and inexpensive."



51 ROBERT D. KAPLAN

Technology as Magnifier of Good and Evil "The record of history is clear: Though technological innovations have changed the way we live, they have not changed man's essential nature."



54 SIMON SCHAMA

Hot-Wired History... Unplugged
"Never confuse history with nostalgia. In its Greek origins, *historia* meant inquiry, and from Thucydides onwards, the past has been studied to understand its connections with the present."



57 MICHAEL JENSEN

Overcoming the Fear of Change
"The technological and political changes buffeting the world are generating major industrial change paralleling that of the industrial revolutions in the eighteenth and nineteenth centuries."



59 JEFFREY EISENACH

Kakumei, Not Revolution, Is the Challenge "The indestructible pillars of the industrial world, its ideas as well as its great institutions, have crumbled before the forces of the digital 'revolution.'"



64 JEREMY RIFKIN

A Radically Different World "There has never been a neutral technology. All technologies are power."



PRIVATE LIFE

81

82 MICHAEL MALONE

The Frontier of the Heart "Here at Downs Pharmacy, amidst the napkin dispensers and catsup bottles, lies a tiny oasis, a respite from one of the greatest social transformations in human history."



98 ESTHER DYSON

Put Friction Back in Cyberspace!
"Life has friction, texture, distance; those inconvenient physical conditions are a part of human life that we'll miss sorely as we move into the digital environment."



101 RICHARD JOHN NEUHAUS

The Internet Produces a Global Village of Village Idiots "I write this with a pen and legal pad at a vacation redoubt in the wilderness of Quebec, far from computers, the Internet, and email urgencies."



104 AL GOLDSTEIN

Cybersex Leaves Me Limp
"Somewhere in the wilds outside of Las Vegas, they are laying plans for the world's first cyberbrothel."



107 BILL McKIBBEN
Out There in the Middle of the Buzz "Those billions of microprocessors that have spawned like springtime frogs in the last quarter century are constantly sending us information, data, and images."

110 WILLIAM F. BUCKLEY JR.
The Evolution of a True Believer "When I was nineteen, I wanted to dance with my girl all night, but she stopped me, after a week's gluttony, and said she would have to go home to begin reading for her senior thesis. I grandly told her not to worry her pretty little head."

113 MICHAEL KINSLEY
The Morality and Metaphysics of Email "The way the new technology has affected my working life most directly has nothing to do with what I am producing."

114 OWEN EDWARDS
Remembrance of Things Fast "As she moved toward the end of a long life, my mother quietly embarked on a process of de-acquisition."

118 THOMAS MOORE
The Butterfly and the Web "A digit, we might remember, is a finger, and a digital world is one where fingers are hard at work."

122 CAMILLE PAGLIA
The Internet & Sexual Personae "A man came up to me and said, 'Do you know you're all over The Well?' 'What is The Well?' I asked."

125 JOE QUEENAN
How I Was Flamed by Serb Heat and Survived "Back in May, I spent three days writing an online novel for Mr. Showbiz, a service launched by Microsoft cofounder Paul Allen."

126 REYNOLDS PRICE
Strengthened by a Pale Green Light "By the time that tumor became life-threatening, my surgeon had mastered a brand-new tool of medical technology."

SCIENCE & TECHNOLOGY 145

146 DAVID BERLINSKI
The End of Materialist Science "For the moment, we are all waiting for the gate of time to open. The great physical theories having acquired a marmoreal aspect, the heroic era of scientific exploration appears at an end."

164 BILL GATES
A View from Olympus "More and more, information about goods and services, buyers and sellers, will migrate to the network. Once that happens, then the people who have been profiting as middlemen passing that information along—well, their world becomes very different."

171 FEDERICO FAGGIN
The Future of the Microprocessor "Since the invention of the integrated circuit in 1961, the number of transistors contained in a single chip has increased one millionfold."

174 NICHOLAS NEGROPONTE
Been Digital—What's the Next Big Thing? "Today paper is still a better display medium and, therefore, offers a better human interface than any computer. But that will change. We won't be the Atoms Family forever."

179 RICHARD LEAKEY
Computers Bring Old Bones to Life "I confess to being one of the few people left in the world who is 'computer illiterate.'"

182 FREDERICK TURNER
Virtual Reality Makes Everyone Principals "This is the ultimate in virtual reality: A smell of dung and honeysuckle and mowing wafts up from the farm below, with the soft baaing of sheep."

187 ANN WINBLAD
The Future of Software Is Now "While the media hums with stories of the Internet, and how it's transforming the way we communicate, perhaps the missed story of our times is the revolution within the software industry."

189 DENNIS MUREN
Hasta la Vista, Humanoid "For the first time in cinematic history, computer artists created amazing images, including a character that appeared just as photo-real and lifelike as the actors performing in the film."

191 STEVEN WEINBERG
At Last—What Sort of World Is This? "We have not yet understood consciousness or intelligence, but there is no reason to suppose that these are anything but the workings of physics and chemistry within the brain. As far as we can tell, there is nothing in the fundamental laws of nature that will suggest any special role for intelligence in the plan of things."

193 ANDREW GROVE
What Can Be Done, Will Be Done "I have a rule, one that was honed by more than thirty years in high tech. It's simple. 'What can be done, will be done.' Like a natural force, technology is impossible to hold back. It finds its way no matter what obstacles people put in its place."

197 PATRICK MCGOVERN
Circling Back to the Small and Simple "George Orwell got it backward. Digital technology is not imposing bureaucracy but restoring a bygone social order. Far from shackling individuals, computers are liberating us."

201 RICH WILLIS
New Math: One Plus One Equals Four "In the information age, conventional mathematics is obsolete. Economics and accounting, which are based on an outdated version of mathematics, are likewise obsolete...in the information age, one plus one equals four."

203 SCOTT McNEALY
Steps to a Digital Networked Future "We are all hopelessly behind in taking advantage of a digital networked future. So what do we do? It makes more sense to focus on where the hockey puck is going, instead of where the puck's been."

PUBLIC LIFE

209

210 TOM WOLFE

Sorry, but Your Soul Just Died



"Something tells me that within ten years, by 2006, the entire digital universe is going to seem like pretty mundane stuff compared to a new technology that right now is but a mere glow radiating from a tiny number of American hospitals."

224 RICK SEGAL

Decade of the Customer "Perhaps it's true that the World Wide Web will end not with a bang but a whimper."



229 TOM BROKAW

Only Good If You Can Trust It "When I began to get involved in broadcasting and journalism as a teenager, I lived in a world of AM-only radio."



231 RUSH LIMBAUGH

The Thorniest Problems Are Never Technological "I remember as a kid the predictions that by the 1980s we were all going to travel around in pneumatic tubes and eat our meals in pill form."



233 BILL FREZZA

History's Greatest Brain Drain "What kinds of societies would emerge if the fabric of civilization could only be woven from the voluntary exchange of value for value?"



235 ROGER McNAMEE

Your Road Map to Spectacular Returns "Where product cycles are short and market leadership is often ephemeral, many of us choose to avoid the risk and invest elsewhere. Don't!"



237 ANDY KESSLER

Taking Stock and Making Cents "Like those magnificent men in their flying machines, tech stocks go up, up, up, and they go down, down, down."



238 TOM PETERS

The Search for Excellence Continues "In 1946 big companies were still managed by the seat of the pants. Bob McNamara changed all that."



244 VIRGINIA POSTREL

No One Can Know Absolutely Everything "It's a common story: the product that takes off in ways its inventor never predicted. The Xerox copy machine was famously more successful than anyone imagined it would be."



247 ROSABETH MOSS KANTER

Can Giants Dance in Cyberspace? "Instead of creating a new culture in tune with the expansive human possibilities of cyberspace, too many corporations are confined in 'bureauspace.'"



252 STANLEY CROUCH

Swingin' to the Digital Times "Jazz was born in the streets around 1900, and technology was essential to its evolution."



260 MICHAEL HAMMER

Reversing the Industrial Revolution "My advice to the somewhat overly enthusiastic technophiles peddling these visions is simple: Get a grip. Information technology will not be felt in direct and immediate ways."



263 PETER HUBER

The End of Law, and the Beginning "Legally speaking, broadcasts and VCRs are simple. It's the Web that's hard."



LAST WORDS

273

274 GEORGE GILDER

What Civilization Can't Afford to Forget "As the millennium approaches, it is time to assert the obvious truth that twentieth-century culture was mostly a nihilist death trip, in the grip of the materialist superstitions of Marxism, naturalism, positivism, Darwinism, and deconstructionism."



289 THE ARTISTS

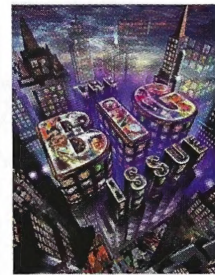
Meet fifty-one of America's (and ASAP's) best illustrators, many of whom are key figures in the current renaissance of magazine illustration.

296 ASAP'S VIEWS

Last thoughts...and what's next.



ABOUT THE COVER



Cover artist Jim Ludtke built a three-dimensional city in cyberspace to make new an old idea of art director Tony Lane (a bird's-eye view of skyscraper letter-

ing—first used on a 1980 Grammy nominated album cover for Chicago XIII). Ludtke then "photographed" it from various angles to create the cover and the six section introductions using the following equipment and software: He created the 3D scenes on an Apple Macintosh 8100/80 and rendered everything on a 9500/120. He built the 3D models in Macromedia's Extreme 3D and imported the models into Electric Image's Electric Image Animation System to do the rendering. He used Adobe Photoshop to create a collage. The collage was then applied to the 3D models of the buildings and letterforms in Electric Image, where he set up a lighting scheme and camera angles and made the final renderings.



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Snail Mail: Forbes ASAP
One Lagoon Drive, Suite 250
Redwood City, CA 94065
Fax: 415-637-1987
Email: editor@forbesasap.com
web: www.forbesasap.com
or www.forbes.com

Contributors

Rich Karlgaard	George Gilder
Virginia Christian	Lee C. Patterson
Eric Pfeiffer	Virginia I. Postrel
Owen Edwards	Geoffrey Baum
Bill Walsh	Gregg Pernick
Tom Peters	Marilyn Wills
Michael S. Malone	Gary Andrew Poole
David Strom	Martha Rogers
Don Peppers	John Romeo
Andy Kessler	Peter Pallans
Michael Gianturco	Linda Byron Glucksman
Nancy Rutter	Tony Lane, A.D. & Design

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BILL HISTORY'S GREATEST BRAIN DRAIN FREZZA

"Civilization is the progress toward a society of privacy. The savage's whole existence is public, ruled by the laws of his tribe. Civilization is the process of setting man free from men." —Ayn Rand, 1943

INDIVIDUAL SOVEREIGNTY. Absolute ownership of oneself. This ideal has intrigued libertarians (with a small *l*) for generations. Unfortunately, only an incurable ideologue believes it will ever happen in the real world. But suppose a place existed where privacy was inherently assured? A place where coercive force, whether exerted by outlaws or by the state in the name of protecting us from outlaws, was physically impossible? A place where both the whims of tyrants and the will of the majority meant nothing?

What kinds of societies would emerge if the fabric of civilization could only be woven from the voluntary exchange of value for value? And how would large economic communities function if they could not appeal to a supreme authority prepared to use guns and clubs to enforce codes of conduct or rights of contract?

It's high time to start asking these questions. This hypothetical place is already under construction. We call it cyberspace, and at the rate things are going, much of the world's productive talent is going to move there over the next fifty years.

In cyberspace, you must learn a new code of social intercourse. You are free to stop listening to whomever you please, but you cannot make someone else shut up. Yes, you can try to dispatch jackbooted policemen to track down and yank out an antagonist's physical connection—if you happen to live in the same political sphere of influence. But invoking this remedy will be hard if you can't discover the identity of the offending party. As anonymous access methods mature, and the ability to create multiple pseudonymous accounts becomes more convenient, only those who choose to reveal their real-world identities will be at risk of nocturnal visits from armed enforcers.

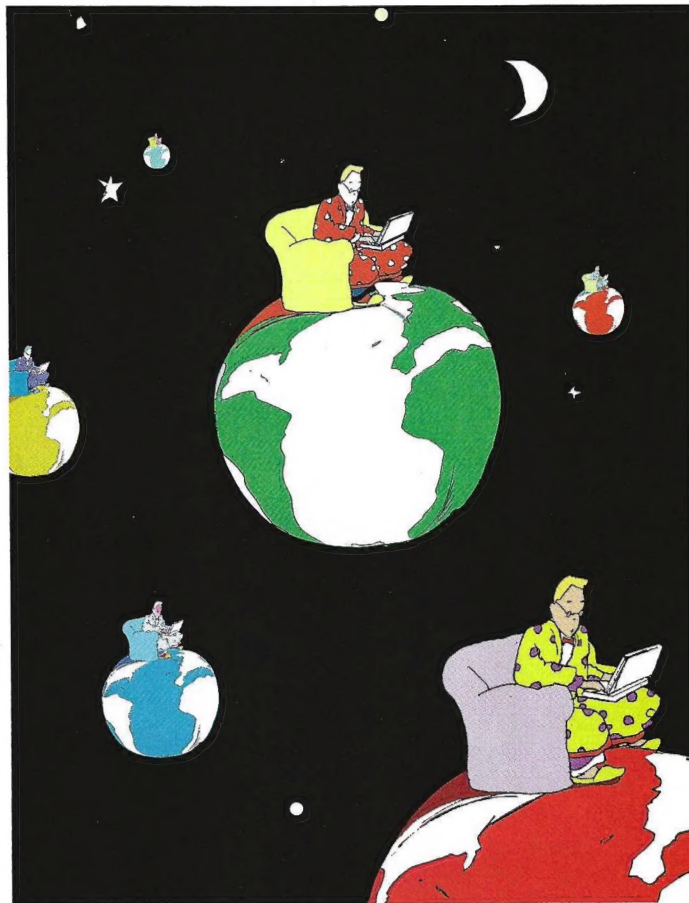
In cyberspace you learn that ever since cryptology escaped from the control of national security agencies it has been flourishing in the private domain. The latest techniques are available for the asking, a simple download away. This is more than a temporary headache for FBI chief Louis Freeh, implacable foe of the legions of terrorists who, we are told, are busily exchanging email messages plotting to blow up the World Trade

Center. Because encryption techniques are based on combinatorial mathematics that are asymmetric, continual advances in low-cost processing power favor the code maker over the code breaker. Soon even the great national labs will be powerless to read encrypted messages produced by inexpensive consumer products. Plug these into the Net behind a mask of anonymity, and privacy becomes not an abstract right but an algorithmic certainty.

The prospect of inviolable freedom of speech thrills civil libertarians. Their odd view of liberty is offended if they're denied access to dirty pictures, though they have no problem watching the state access your paycheck. These halfhearted freedom fighters will soon learn that censorship's demise is just a

trifle compared with what lies ahead.

When it reaches maturity, the Internet will do nothing less than dissolve the hoary grip of collectivism. How? As the Net's tentacles spread around the globe, supranational economic communities will arise behind the cryptographers' shield. Within these virtual communities, members will create and exchange anything that can be represented by a string of bits, that is, anything that is a product of the human mind. Alongside the work output of the vast majority of citizens in the developed countries, electronic money will invisibly ► 268



FREZZA

233 ◀ flow in all its rich new forms.

For the first time, individuals will be free to commit acts of commerce unmolested by the prying eyes and grasping hands of sovereign powers. Wealth will be created, invested, and stored in complete privacy. Docile acceptance of the state's right to unlimited access to our personal economic affairs, a heinous doctrine introduced with tax-the-rich schemes (and slowly expanded to bilk even the working poor), cannot survive a transition to cyberspace. When privacy permeates the world of electronic commerce, the interlinked process by which bankers, employers, and merchants are commanded to spy on their employees and customers will come to an end.

By providing a sanctuary where individuals can keep the fruits of their labor, cyberspace will entice humanity's most productive elements—its knowledge workers—into incrementally withdrawing from the visible economy. This silent exodus will grow into history's greatest brain drain. It will sap the vigor of the old order while fueling an explosion of laissez-faire capitalism that will make the Industrial Revolution look like the trial run it was.

The global Net is radically different from any means by which societies have ever been connected. Unlike the roads of ancient Rome, the ships of the British Empire, or the mass media of the twentieth-century welfare/warfare states, the Internet will galvanize commerce and spread culture but never serve as a handmaiden of the state. This distributed, self-organizing network of networks, devoid of centralized access control, is immune from domination by any single entity. It will work itself into the bowels of even the most autocratic regimes, giving those who would rule others nothing in return.

This makes the Internet a grave threat to the world's governing classes, particularly those addicted to the politics of income redistribution financed by progressive taxation. Alert defenders of the status quo have already begun fighting back. Have you wondered what is really motivating our federal government to work so hard to slow the export of strong encryption or to promote key-escrow schemes that create a back door into any transaction? Do the public explanations offered make any sense to you? Are you puzzled about the Clinton administration's effort to guide the development of the information superhighway while simultaneously orchestrating a propaganda campaign intended to paint cyberspace as a haven for pornographers, terrorists, and drug-money launderers? This paradoxical behavior makes a lot more sense when viewed as a coordinated policy to prevent an epidemic of privacy from subverting the fiscal authority of the State.

Concerted government action can slow things down, but short of globally nationalizing the computer and telecommunications industries, we have already passed the point of no return. The era of big government is indeed over, and technology will make sure it doesn't come back from the dead.

Not far ahead lies the unbounded opportunity society of cyberspace. Who among us will choose to live in a place where productive merit is king while envy must travel unarmed? ■

Bill Frezza is a columnist for CommunicationsWeek and Network Computing magazine and cofounder of the DigitalLiberty Forum (www.digitalib.org). He obtained his B.S. and M.S. in electrical engineering from MIT.